

DATE: June 1, 2018

TO: Greenbelt City Council

CC: Capt. Gordon Pracht, Greenbelt Police Department Liaison
Mary Johnson, City Liaison
Beverly Palau, Public Information and Communications Coordinator
Nicole Ard, City Manager

FROM: Public Safety Advisory Committee
Dr. Laura Kressler, Vice Chair

SUBJECT: Greenbelt Cellular Phone Connectivity and Reliability

In late Summer/early Fall 2017, a cellular reception issue was brought to the attention of a member of the Public Safety Advisory Committee (PSAC). Dr. Laura Kressler stopped to assist a bicyclist who was involved in a motor vehicle accident on Ridge Road at Hamilton Place. When she arrived on the scene and inquired if emergency services had been notified, the driver stated he had been trying to call 911 with no success for several minutes. The driver of the motor vehicle stated he had been unable to reach emergency services because he could not get a sufficient cell signal. Dr. Kressler attempted to call 911 unsuccessfully several times before finally getting through. It appeared that poor cell reception was the cause of the call failures. The poor cellular reception resulted in a delay of at least 5 minutes in notifying emergency services that medical aid was needed.

In late 2017, Dr. Kressler noticed a post on the "Greenbelters" Facebook page describing an issue of concern related to poor cell reception in Greenbelt vis-à-vis emergency services calls. This post got her attention particularly because of the experience she had with the motor vehicle accident mentioned above. In the Facebook post, the resident related that he had tried repeatedly over several hours to make an emergency call to his wife with no success due to the cell reception being essentially nonexistent. This was not an unfamiliar problem to him as he had experienced this issue many times previously. He also noted in subsequent follow-up posts that he felt the issue had become progressively worse over the last year.

The original Facebook post had over 300 responses and a few follow up posts to the original conversation brought the responses to over 500. Those posts almost exclusively supported the original author's concerns and experiences. Many responses stated that they also had very poor to no cell reception in their homes or within certain areas of the City, especially the Center of Greenbelt. Some residents reported having to resort to such antics as standing by windows, hanging out second floor windows, standing on porches or even standing in the street to gain any level of cell reception. Some residents stated they could only make cellular calls while standing up or that they had to leave their home and walk down the street to receive a sufficient cell signal to make or receive a call. Some people had given up attempting to make cellular calls within the Center of Greenbelt altogether.

The overwhelming consensus of people responding to this thread on Facebook was that the cellular reception across the various carriers was progressively deteriorating especially over the last year. Additionally, the consensus was that the cellular signal had gotten so weak during this period that it was becoming, or had already become in some cases, so weak that cellular calls could not even be connected or maintained in many areas of the Center of Greenbelt, as well as scattered areas in other sections of the City.

Dr. Kressler brought this matter to the attention of PSAC in December of 2017. A decision was made by the committee to look into this matter further to see if it warranted action. The resident who was the author of the original Facebook post attended the next PSAC meeting to share his experience in person with the committee. The committee voted to continue researching the cellular reception issue and to look into potential solutions.

The PSAC asked residents to send comments with their name, street address, cellular carrier and details about any cellular connectivity or reliability problems in order to assess the extent of the problem. To date the committee has received a total of 68 responses (see Attachment 1). Of those 68 responses, 62 detailed significant problems with making, receiving and maintaining cellular phone calls within the central portion of the City. Only six residents stated they had no problems with cellular phone calls. The cellular carriers represented by these 68 responses were Verizon, AT&T, T-Mobile, Sprint, Credo and Metro PCS (1)¹. Many residents reported resorting to the use of Wi-Fi calling using a nearby wireless router or cellular/network booster to enable clear and reliable cellular calls. However, these devices are only reliable when there is power and a reliable internet connection. If either of these conditions is not met, Wi-Fi calling fails.

A graphic illustration of the cellular reception issue within the City was created using ArcGIS (Geographic Information System) software. A heat map or a diagram where data values are represented by colors was generated. This heat map demonstrates where each of the 62 positive (poor cellular reception) responses in our data set reside within the City. The colors on the map indicate the number of responses in that geographic area and an increase in data density is represented by a warmer color (i.e. Yellow) whereas a lower data density is represented by a cooler color (i.e. Blue).

The heat map we generated illustrates that the current data is spread relatively evenly over the center of Greenbelt or the Historic district. We received almost no responses from Greenbelt East and Greenbelt West. This may indicate that these areas do not suffer from cellular reception issues, but more likely indicates a failure in contacting residents from these areas using Facebook. This issue needs to be addressed and studied further.

At a time when cell phones have rapidly become the primary and often only phone for many people, our data analysis indicates that there is a very significant deficit in the cellular phone signal within the central portion of the City of Greenbelt. This can be inconvenient and annoying when making routine daily calls, but it is a serious and potentially life-threatening situation when emergency services are needed. Not being able to order a pizza is frustrating, but not being able to summon an ambulance or the police could result in the loss of life.

In the process of researching the potential cause of the poor cellular signal in the City, we contacted one of the cellular carriers, Verizon. Verizon representatives stated that the cause is quite simply overloaded cellular towers which are far beyond the carrying capacity they were designed to handle. Verizon stated that the solution is to add an additional cellular tower² to boost the cellular signal strength, provide

¹ Four responses did not indicate their cellular carrier

² The application to add additional Verizon cellular phone towers can be found here: <https://www.verizonwireless.com/biz/real-estate-inquiries/>.

more uniform coverage geographically and provide more carrying capacity for the cellular users in the area.

During multiple discussions with residents over the last several months, it became apparent that this is the same general response other cellular carriers such as AT&T, T-Mobile and Sprint have given customers when contacted about the poor cellular signal within the City. Customers have been informed there is simply no other complete solution to this problem at this time other than adding an additional cellular tower. Other potential temporary solutions such as Wi-Fi calling and network extenders are simply "BAND-AID" type solutions which only work when there is power and an internet connection. At this point, it appears that an additional cellular phone tower is crucial to ensure that cellular calls can be made reliably within the City particularly within the central portion of Greenbelt. This is especially imperative to ensure that emergency services calls can be made reliably.

The PSAC members feel that the issue of cellular phone connectivity and reliability has become an urgent issue that needs to be addressed as soon as possible. Additionally, we acknowledge that the Public Safety Advisory Committee still has work to do on this topic including outreach to residents of Greenbelt East and West to document their experience with cellular phone connectivity and reliability.

Respectfully yours,
Dr. Laura Kressler, Vice Chair
Public Safety Advisory Committee